High school mathematics and science course-taking patterns

Courses in mathematics and science can teach students to use higher level thinking skills to solve complex problems. These skills are considered valuable both in educational and marketplace settings. Analysis of course-taking patterns of high school graduates can indicate levels of exposure in these fields for individuals who are about to advance to higher education or to enter the work force.

- High school graduates in 1994 were more likely to take mathematics courses at the level of algebra I or higher and science courses at the level of biology or higher than their counterparts in 1982.
- The proportion of high school graduates who took algebra II and the proportion who took chemistry increased 7 percentage points between 1990 and 1994 and increased over 25 percentage points between 1982 and 1994 (to 59 and 56 percent, respectively).
- A larger percentage of 1994 graduates, both male and female, earned credit in biology, chemistry, and physics than their 1982 counterparts. Similar percentages of males and females earned credit in biology in both years. Females were more likely to earn credit in chemistry in 1994, while males were consistently more likely to earn credit in physics.
- The percentage of Hispanics and American Indians / Alaskan Natives taking algebra II more than doubled between 1982 and 1994, rising from 18 percent for Hispanics and from 11 percent for American Indians in 1982 to 51 percent for Hispanics and 39 percent for American Indians / Alaskan Natives in 1994 (see supplemental table 24-1).

Percentage of high school graduates taking selected mathematics and science courses in high school, by sex: 1982, 1987, 1990, and 1994

Mathematics and	Total				Male				Female			
science courses[1]	1982	1987	1990	1994	1982	1987	1990	1994	1982	1987	1990	1994
Mathematics[2]												
Algebra I	53.9	64.0	64.2	66.4	52.2	62.3	61.7	64.7	55.4	65.7	66.5	68.1
Geometry	45.5	59.7	63.4	70.4	45.0	58.8	62.4	68.3	45.9	60.4	64.4	72.4
Algebra II	32.2	48.1	51.7	58.6	32.4	47.3	50.0	55.4	32.0	48.9	53.3	61.6
Trigonometry	12.1	18.6	18.2	17.2	13.2	19.5	18.1	16.6	11.1	17.6	18.2	17.8
Analysis/pre-calculus	5.9	12.6	13.4	17.3	6.2	13.5	14.0	16.3	5.6	11.6	12.8	18.2
Calculus	4.6	6.0	6.5	9.2	5.1	7.4	7.5	9.4	4.1	4.6	5.6	9.1
Science												
Biology	76.4	87.8	91.3	93.5	74.2	86.3	90.0	92.3	78.4	89.4	92.5	94.7
Chemistry	30.9	43.7	49.0	56.0	31.9	44.3	47.9	53.2	30.0	43.2	50.0	58.7
Physics	14.2	19.2	21.5	24.4	18.8	24.0	25.4	26.9	10.0	14.6	18.0	22.0
Biology and chemistry	28.1	42.1	47.6	53.8	28.2	42.2	46.4	50.9	28.0	42.0	48.8	56.6
Biology, chemistry, and physics	10.6	16.4	18.8	21.3	13.4	20.1	21.8	23.1	7.9	12.8	16.1	19.6

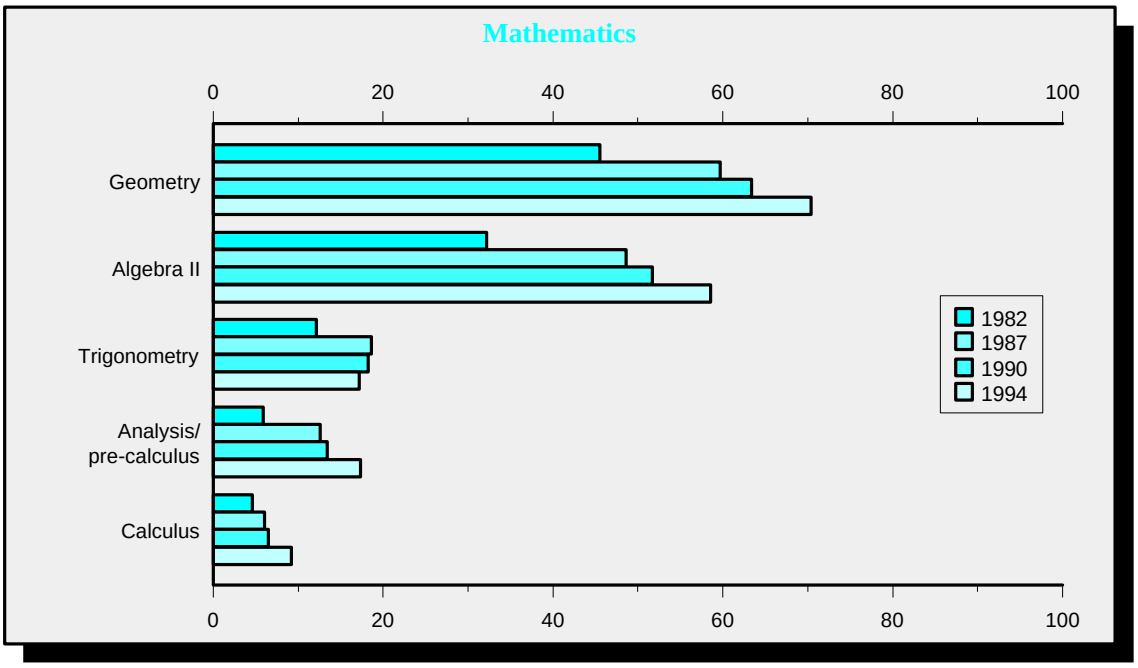
[1] The minimum number of units used for inclusion in this indicator was 1.0 for individual courses except for algebra II, trigonometry, and analysis/pre-calculus where 0.5 was set as the minimum number of credits.

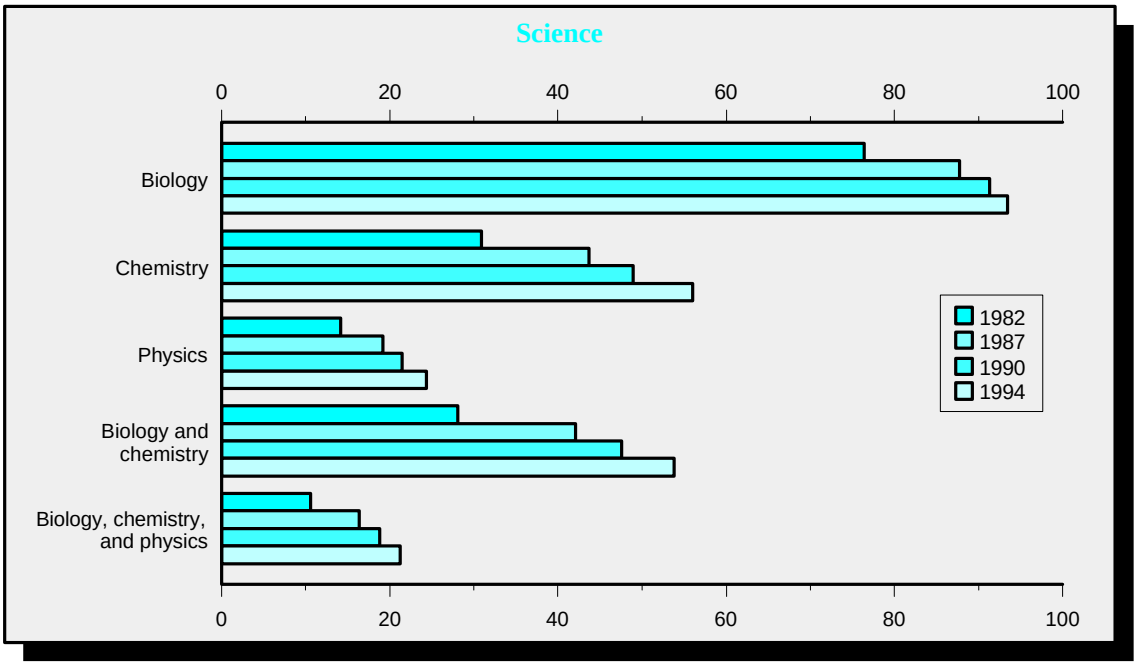
[2] These data only report the percentage of students who earned credit in mathematics courses while in high school and do not count those students who took these courses prior to entering high school. In 1992, for example, approximately 93 percent of students had taken algebra I at any time prior to graduating from high school, and about 70 percent had taken geometry.

NOTE: See the supplemental note to this indicator for further explanation of courses and definitions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Percentage of high school graduates taking selected mathematics and science courses in high school: 1982, 1987, 1990, and 1994





SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Note to Indicator 24: High school transcript studies

This analysis contains data from high school transcript studies conducted by the National Center for Education Statistics (NCES). Data on average course credits, or Carnegie units, for high school graduates come from the following studies: the 1987, 1990, and 1994 National Assessment of Educational Progress (NAEP) High School Transcript Studies (1987, 1990, and 1994 data); and the High School and Beyond (HS&B) Transcript Study (1982 data). A description of these studies, including descriptions of the sampled populations, follows.

The 1987, 1990, and 1994 NAEP High School Transcript Studies were conducted using nearly identical methodology and techniques. The sample of schools was nationally representative, and included schools having grade 12 or 17-year-old students. The sample was also representative of graduating seniors from each school. Since the focus of the transcript studies was high school graduates, schools with 17-year-olds but without 12th grade were not included in the subsample used in these analyses. Of the remaining schools, only those students who graduated were selected.

Between May and November of 1994, high school transcripts were collected from 25,573 students who graduated in 1994. To be consistent with the 1982 study, students with an Individualized Education Program (IEP) were omitted from all estimates in the tables. Also, students with incomplete transcripts were dropped, bringing the number of transcripts analyzed to 24,374. These students attended 340 schools that had been sampled by the NAEP. In spring 1991, transcripts were collected from 21,607 students who graduated from high school in 1990. These students attended 330 schools that had been sampled for the NAEP.

The sample of schools for the 1987 High School Transcript Study consisted of a nationally representative sample of 497 secondary schools selected for the 1986 NAEP for grade 11, 17-year-old students, of which 433 schools participated. The 1987 study was restricted to students who were in grade 11 during the 1985–86 school year. There are 27,732 graduates from 1987 represented in the tables. Data for 1987, 1990, and 1994 in this analysis are from the NCES publication *The 1994 High School Transcript Study Tabulations.*

In 1982, HS&B collected high school transcripts for members of the sophomore cohort who were selected for the second follow-up survey (about 12,000 transcripts). As in the 1987, 1990, and 1994 NAEP High School Transcript Studies, records were obtained from all types of high schools. However, because the 1982 HS&B used a different method to identify disabled students, students who had participated in a special education program were excluded from the tabulations to make the figures consistent.

Each of the transcript studies used the taxonomy of Classification of Secondary School Courses (CSSC), which contains approximately 2,200 course codes used to define course content and level. These studies also included additional course and student information, such as grade and credit received, grade level, graduation status, age, gender, and race / ethnicity.

The numbers in all the tables differ from previous editions of *The Condition of Education* for two reasons. First, a new exclusionary rule was applied to the transcripts beginning in 1996. Each year the transcripts must be examined for validity and completeness. Incomplete transcripts, those of students receiving special education diplomas, or those from schools which have unique definitions of credit hours were excluded. In previous years, transcripts showing that a student had taken more than 32 credit hours were excluded based on the supposition that their schools must be using shorter class periods than other schools, and thus one credit hour would not mean the same thing in these schools as in the average school. A case-by-case analysis of these schools showed that their class periods were no shorter than the average school; instead, these schools had particularly stringent graduation requirements. Therefore, the data for all years were recalculated to include these transcripts.

Second, in previous editions of *The Condition*, students who had taken algebra II or beyond in high school but had not taken algebra I or geometry were assumed to have taken these courses prior to entering high school and were included in the percentage of students who had taken these courses. Beginning with the 1996 edition, the numbers reflect only those students who took these courses *while in high school*. The numbers for these two subjects appear to have dropped from previous years, but in actuality, only the number of students who were included in the analysis has dropped.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations*, 1996.

Table 24-1 Percentage of high school graduates taking selected mathematics and science courses in high school, by race/ethnicity: 1982, 1987, 1990, and 1994

Mathematics and science Courses (credits)	1982 White	1982 Black	1982 His-panic	1982 Asian/ Pacific Islander	1982 American Indian/ Alaskan Native	1987 White	1987 Black	1987 His-panic	1987 Asian/ Pacific Islander	1987 American Indian/ Alaskan Native
Mathematics										
Any mathematics (1.00)	98.7	99.2	97.2	100.0	99.6	98.9	98.2	99.1	99.8	98.7
Algebra I (1.00)	57.8	42.4	42.4	55.5	33.2	66.1	54.6	53.6	63.6	60.9
Geometry (1.00)	51.0	28.8	25.6	64.9	33.2	63.0	42.2	39.6	81.1	43.2
Algebra II (0.50)	36.0	22.0	18.0	45.6	10.8	51.6	30.8	29.2	66.4	27.6
Trigonometry (0.50)	13.7	6.0	6.4	26.8	3.0	20.4	10.6	9.8	41.3	4.2
Analysis/pre-calculus (0.50)	6.8	2.2	2.8	14.5	1.8	13.2	5.1	7.3	39.4	5.4
Statistics/probability (0.50)	1.2	0.5	0.1	1.7	~0.0	1.4	0.3	0.2	1.5	~0.0
Calculus (1.00)	5.4	1.3	1.7	12.8	4.0	5.6	2.2	3.6	29.4	0.4
AP calculus (1.00)	1.8	0.3	0.4	5.5	0.1	2.7	1.4	2.6	23.5	0.4
Science										
Any science (1.00)	96.9	97.4	93.8	96.2	92.1	98.8	98.1	98.6	99.3	99.8
Biology (1.00)	78.3	73.0	68.2	83.7	66.7	88.7	84.7	85.4	91.5	90.2
AP/honors biology (1.00)	7.4	4.6	3.1	11.9	0.6	2.7	1.4	1.6	4.2	0.3
Chemistry (1.00)	34.1	21.9	15.5	52.8	25.9	46.6	28.4	29.1	69.8	26.4
AP/honors chemistry (1.00)	3.3	1.6	1.3	5.8	0.9	3.4	1.1	2.2	15.3	0.6
Physics (1.00)	16.3	7.3	5.7	34.8	8.1	20.6	9.7	9.9	46.5	8.3
AP/honors physics (1.00)	1.2	0.9	0.4	3.4	~0.0	1.6	0.4	0.8	5.6	1.4
Engineering (1.00)	0.2	0.1	0.1	~0.0	~0.0	0.1	0.4	0.1	0.4	~0.0
Astronomy (0.50)	1.3	0.4	0.7	~0.0	~0.0	0.9	0.3	0.7	0.7	0.5
Geology/earth science (0.50)	14.0	10.0	11.2	9.6	18.8	14.0	18.1	11.6	12.4	12.3
Biology and chemistry (2.00)	31.3	19.7	14.2	48.5	21.9	45.1	27.2	27.9	66.3	24.8
Biology, chemistry, and physics (3.00)	12.2	4.8	3.9	28.4	7.8	17.6	8.3	8.2	41.8	6.2

Table 24-1 Percentage of high school graduates taking selected mathematics and science courses in high school, by race/ethnicity: 1982, 1987, 1990, and 1994 - Continued

Mathematics and science courses (credits)	1990 White	1990 Black	1990 His-panic	1990 Asian/ Pacific Islander	1990 American Indian/ Alaskan Native	1994 White	1994 Black	1994 His-panic	1994 Asian/ Pacific Islander	1994 American Indian/ Alaskan Native
Mathematics[1]										
Any mathematics (1.00)	99.5	99.5	99.9	99.9	100.0	99.6	99.3	99.2	100.0	98.9
Algebra I (1.00)	64.2	65.1	64.8	63.2	61.7	67.5	65.0	70.7	61.7	58.7
Geometry (1.00)	65.6	56.2	53.6	70.6	55.7	72.7	58.1	69.4	75.8	60.0
Algebra II (0.50)	55.0	41.4	35.7	59.9	47.1	61.6	43.7	51.0	66.6	39.2
Trigonometry (0.50)	19.3	14.0	10.8	35.1	14.7	18.6	13.6	9.8	25.3	6.7
Analysis/pre-calculus (0.50)	14.8	6.2	7.2	25.3	7.6	18.2	9.8	13.9	33.9	8.7
Statistics/probability (0.50)	1.0	1.1	0.9	1.5	0.3	2.3	1.7	1.0	1.1	1.2
Calculus (1.00)	6.9	2.8	3.8	18.5	4.2	9.6	3.8	6.0	23.4	3.8
AP calculus (1.00)	4.2	1.2	3.0	15.6	3.0	7.3	2.0	4.6	21.0	2.2
Science										
Any science (1.00)	99.3	99.6	99.3	99.8	100.0	99.7	99.5	99.3	99.3	99.7
Biology (1.00)	91.5	91.3	90.3	90.4	90.5	94.4	91.3	94.0	90.9	91.2
AP/honors biology (1.00)	5.0	3.8	2.4	6.3	1.9	4.6	2.7	3.3	8.3	1.7
Chemistry (1.00)	51.5	40.3	38.4	63.6	35.5	58.5	43.8	46.5	69.3	41.3
AP/honors chemistry (1.00)	3.7	2.5	1.1	7.7	4.5	4.3	2.1	2.5	7.7	0.6
Physics (1.00)	23.1	14.6	13.3	38.4	14.7	26.1	14.7	16.0	42.3	10.3
AP/honors physics (1.00)	2.1	0.7	1.0	5.9	0.5	2.5	1.4	1.8	6.0	0.3
Engineering (1.00)	0.1	0.1	~0.0	~0.0	~0.0	0.2	0.4	0.1	1.0	~0.0
Astronomy (0.50)	1.4	0.4	1.1	0.7	1.7	2.0	0.6	0.4	0.8	2.2
Geology/earth science (0.50)	27.6	15.9	14.0	15.7	31.0	23.8	23.3	15.3	16.7	23.2
Biology and chemistry (2.00)	50.2	39.5	36.5	60.1	34.2	56.4	42.2	45.1	64.8	39.6
Biology, chemistry, and physics (3.00)	20.6	12.0	10.2	33.7	10.8	22.7	13.0	13.4	37.2	8.0

[1] These data only report the percentage of students who earned credit in each mathematics course while in high school and do not count those students who took these courses prior to entering high school. In 1992, for example, approximately 93 percent of students had taken algebra I at some point before graduating high school, either before or during high school, and about 70 percent had taken geometry.

~ Percents less than 0.05 are rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Table 24-2 Percentage of high school graduates taking selected mathematics and science courses in high school, by sex: 1982, 1987, 1990, and 1994

Mathematics and science courses (credits)	1982			1987			1990			1994		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Mathematics[1]												
Any mathematics (1.00)	98.5	98.8	98.3	98.9	98.7	99.1	99.6	99.5	99.6	99.6	99.5	99.6
Algebra I (1.00)	53.9	52.2	55.4	64.0	62.3	65.7	64.2	61.7	66.5	66.4	64.7	68.1
Geometry (1.00)	45.5	45.0	45.9	59.7	58.8	60.4	63.4	62.4	64.4	70.4	68.3	72.4
Algebra II (0.50)	32.2	32.4	32.0	48.6	47.3	48.9	51.7	50.0	53.3	58.6	55.4	61.6
Trigonometry (0.50)	12.1	13.2	11.1	18.6	19.5	17.6	18.2	18.1	18.2	17.2	16.6	17.8
Analysis/pre-calculus (0.50)	5.9	6.2	5.6	12.6	13.5	11.6	13.4	14.0	12.8	17.3	16.3	18.2
Statistics/probability (0.50)	1.0	1.1	0.9	1.3	1.1	1.2	1.0	1.2	0.8	2.0	2.0	2.1
Calculus (1.00)	4.6	5.1	4.1	6.0	7.4	4.6	6.5	7.5	5.6	9.2	9.4	9.1
AP calculus (1.00)	1.5	1.6	1.4	3.2	3.8	2.7	4.1	5.0	3.4	7.0	7.2	6.8
Science												
Any science (1.00)	96.6	96.4	96.7	98.7	98.4	99.0	99.4	99.1	99.6	99.5	99.3	99.8
Biology (1.00)	76.4	74.2	78.4	87.8	86.3	89.4	91.3	90.0	92.5	93.5	92.3	94.7
AP/honors biology (1.00)	6.6	6.1	7.1	2.7	2.8	2.6	4.9	4.4	5.4	4.6	4.0	5.1
Chemistry (1.00)	30.9	31.9	30.0	43.7	44.3	43.2	49.0	47.9	50.0	56.0	53.2	58.7
AP/honors chemistry (1.00)	2.9	3.5	2.3	3.3	3.9	2.7	3.5	4.1	2.9	3.9	4.1	3.7
Physics (1.00)	14.2	18.8	10.0	19.2	24.0	14.6	21.5	25.4	18.0	24.4	26.9	22.0
AP/honors physics (1.00)	1.0	1.4	0.7	1.6	2.4	0.9	2.0	2.5	1.6	2.4	3.0	1.8
Engineering (1.00)	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	~0.0	0.3	0.4	0.2
Astronomy (0.50)	1.1	1.3	0.9	1.0	1.1	0.8	1.2	1.4	1.1	1.7	2.0	1.5
Geology/earth science (0.50)	13.2	14.2	12.3	14.5	15.0	13.8	24.8	25.7	24.1	23.0	22.8	23.2
Biology and chemistry (2.00)	28.1	28.2	28.0	42.1	42.2	42.0	47.6	46.4	48.8	53.8	50.9	56.6
Biology, chemistry, and physics (3.00)	10.6	13.4	7.9	16.4	20.2	12.8	18.8	21.8	16.1	21.3	23.1	19.6

[1] These data only report the percentage of students who earned credit in each mathematics course while in high school and do not count those students who took these courses prior to entering high school. In 1992, for example, approximately 93 percent of students had taken algebra I at some point before graduating from high school, either before or during high school, and about 70 percent had taken geometry.

~ Percent less than 0.05 is rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Table 24-3 Percentage of high school graduates taking selected mathematics and science courses in high school, by control of school: 1982, 1987, 1990, and 1994

Mathematics and science courses (credits)	1982		1987		1990		1994	
	Public	Private	Public	Private	Public	Private	Public	Private
Mathematics[1]								
Any mathematics (1.00)	98.4	99.8	98.8	99.9	99.6	99.8	99.5	99.9
Algebra I (1.00)	51.3	75.2	62.7	77.8	62.7	79.9	65.4	78.1
Geometry (1.00)	41.9	75.0	57.1	85.5	61.3	84.3	68.8	88.8
Algebra II (0.50)	29.7	52.8	45.0	78.7	49.3	75.5	56.4	81.8
Trigonometry (0.50)	11.0	21.4	17.4	28.0	17.2	27.3	16.2	29.5
Analysis/pre-calculus (0.50)	5.0	12.8	11.4	22.8	12.2	25.3	16.2	29.6
Statistics/probability (0.50)	0.9	1.9	1.1	1.6	0.8	2.6	2.1	1.6
Calculus (1.00)	3.7	12.0	5.5	10.9	6.2	9.6	8.8	14.4
AP calculus (1.00)	1.3	3.0	3.0	5.4	3.8	7.0	6.5	11.9
Science								
Any science (1.00)	96.2	99.0	98.6	100.0	99.3	99.9	99.5	100.0
Biology (1.00)	74.5	91.9	87.0	96.7	90.7	97.1	93.5	97.4
AP/honors biology (1.00)	6.5	7.5	2.2	7.9	5.0	3.9	4.2	9.1
Chemistry (1.00)	28.7	49.2	41.0	70.9	47.2	66.8	54.4	74.8
AP/honors chemistry (1.00)	2.6	4.9	3.1	5.0	3.6	2.1	4.0	3.2
Physics (1.00)	13.3	22.0	18.3	28.6	20.6	31.5	23.7	32.1
AP/honors physics (1.00)	1.0	1.4	1.3	4.6	1.9	3.2	2.4	2.2
Engineering (1.00)	0.2	0.1	0.1	~0.0	0.1	0.1	0.3	~0.0
Astronomy (0.50)	1.2	0.1	1.0	0.3	1.3	0.6	1.8	0.3
Geology/earth science (0.50)	13.8	8.6	14.9	10.5	25.1	22.1	23.1	21.6
Biology and chemistry (2.00)	25.9	46.8	39.3	69.4	45.9	65.2	52.2	72.6
Biology, chemistry, and physics (3.00)	9.7	17.5	15.6	25.0	17.9	28.3	20.5	30.1

[1] These data only report the percentage of students who earned credit in each mathematics course while in high school and do not count those students who took these courses prior to entering high school. In 1992, for example, approximately 93 percent of students had taken algebra I at some point before graduating high school, either before or during high school, and about 70 percent had taken geometry.

~ Percents less than 0.05 are rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Table 24-4 Percentage of high school graduates taking selected mathematics and science courses in high school, by urbanicity: 1987 and 1994

Mathematics and science courses (credits)	1987				1994			
	Big city	Urban fringe	Medium city	Small place	Big city	Urban fringe	Medium city	Small place
Mathematics[1]								
Any mathematics (1.00)	98.8	99.2	98.7	98.8	99.6	99.6	99.5	99.5
Algebra I (1.00)	58.3	63.1	65.6	66.0	71.4	59.9	64.6	69.0
Geometry (1.00)	56.4	66.2	60.3	56.2	78.2	73.5	72.8	64.6
Algebra II (0.50)	42.0	52.2	51.0	46.4	65.2	59.3	57.2	55.9
Trigonometry (0.50)	19.3	25.1	20.7	13.1	18.1	21.1	19.2	13.8
Analysis/pre-calculus (0.50)	15.0	13.8	14.7	10.1	21.2	20.0	18.9	13.5
Statistics/probability (0.50)	1.3	1.2	0.5	1.3	2.1	3.2	2.0	1.3
Calculus (1.00)	7.1	8.9	5.3	3.9	9.6	12.4	11.1	6.5
AP calculus (1.00)	5.0	5.7	2.4	1.4	7.7	9.7	8.6	4.5
Science								
Any science (1.00)	98.9	98.9	98.1	98.7	99.7	99.5	99.8	99.4
Biology (1.00)	86.7	87.8	87.2	88.4	89.6	93.5	93.5	95.1
AP/honors biology (1.00)	2.4	3.8	3.9	1.6	3.4	6.8	5.8	3.2
Chemistry (1.00)	39.0	50.9	44.9	40.1	61.0	60.0	56.0	51.4
AP/honors chemistry (1.00)	3.2	3.8	5.6	2.2	2.3	4.0	4.4	4.4
Physics (1.00)	19.1	22.2	17.4	18.0	26.6	31.1	25.9	19.0
AP/honors physics (1.00)	1.7	2.0	2.8	0.9	3.6	4.3	3.2	0.4
Engineering (1.00)	0.4	0.1	~0.0	0.1	0.2	0.7	0.3	0.1
Astronomy (0.50)	1.4	1.6	0.7	0.5	0.9	2.5	2.7	1.2
Geology/earth science (0.50)	13.5	18.3	12.4	13.0	26.5	27.2	18.6	20.5
Biology and chemistry (2.00)	37.0	48.8	43.4	38.9	56.2	58.4	53.2	50.3
Biology, chemistry, and physics (3.00)	20.2	20.8	19.3	17.2	23.0	27.9	21.8	16.4

[1] These data only report the percentage of students who earned credit in mathematics courses while in high school and do not count those students who took these courses prior to entering high school. In 1992, for example, approximately 93 percent of students had taken algebra I at any time prior to graduating from high school, and about 70 percent had taken geometry.

~ Percents less than 0.05 are rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Table 24-5 Percentage of high school graduates taking selected mathematics and science courses, by geographic region: 1982 and 1994

Mathematics and science courses (credits)	1982				1994			
	Northeast	South	Midwest	West	Northeast	South	Midwest	West
Mathematics[1]								
Any mathematics (1.00)	97.9	99.4	98.7	97.6	99.5	99.7	99.5	99.3
Algebra I (1.00)	51.7	55.3	56.8	49.3	62.2	68.5	67.5	63.5
Geometry (1.00)	48.4	40.4	49.8	43.3	74.9	70.6	68.9	68.6
Algebra II (0.50)	40.0	33.2	28.1	26.9	70.4	59.4	55.6	51.6
Trigonometry (0.50)	16.0	10.0	12.2	10.4	22.2	17.6	17.3	11.4
Analysis/pre-calculus (0.50)	8.4	3.9	6.2	5.5	18.7	15.2	16.8	21.5
Statistics/probability (0.50)	2.2	0.4	1.1	0.4	1.8	1.4	3.3	1.6
Calculus (1.00)	10.9	2.6	2.4	3.4	13.6	8.1	8.7	9.1
AP calculus (1.00)	3.6	0.8	0.6	1.4	9.0	6.0	6.9	7.5
Science								
Any science (1.00)	97.4	98.2	95.0	95.0	99.7	99.8	99.5	98.9
Biology (1.00)	81.2	80.3	71.1	71.7	95.4	96.5	90.4	90.3
AP/honors biology (1.00)	9.7	5.9	6.6	3.9	7.3	5.1	2.6	4.3
Chemistry (1.00)	44.2	26.4	30.3	21.8	65.0	53.2	56.3	54.0
AP/honors chemistry (1.00)	6.0	1.6	1.9	2.6	3.2	4.8	4.3	2.1
Physics (1.00)	22.6	9.3	14.9	10.7	35.9	20.8	24.6	22.6
AP/honors physics (1.00)	1.9	0.6	1.0	0.9	4.6	1.9	1.8	2.4
Engineering (1.00)	0.4	–[2]	0.1	0.1	0.6	0.4	–[2]	0.1
Astronomy (0.50)	1.6	1.0	1.2	0.4	1.5	1.2	3.2	0.6
Geology/earth science (0.50)	22.7	9.3	11.2	11.1	34.5	19.2	22.3	23.0
Biology and chemistry (2.00)	41.6	24.4	27.2	18.1	63.6	52.2	53.0	50.5
Biology, chemistry, and physics (3.00)	18.9	6.6	10.3	6.8	33.0	18.2	21.1	18.7

[1] These data only report the percentage of students who earned credit in mathematics courses while in high school and do not count those students who took these courses prior to entering high school. In 1992, for example, approximately 93 percent of students had taken algebra I at any time prior to graduating from high school, and about 70 percent had taken geometry.

[2] Percents less than 0.05 are rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Table 24-6 Percentage of high school graduates taking selected mathematics and science courses, by school program:[1] 1982 and 1994

Mathematics and science courses (credits)	1982				1994			
	Academic	Vocational	Both	Neither	Academic	Vocational	Both	Neither
Mathematics[2]								
Any mathematics (1.00)	99.9	96.6	100.0	97.8	100.0	97.7	100.0	95.6
Algebra I (1.00)	67.2	42.0	60.0	42.2	69.8	41.1	72.0	42.8
Geometry (1.00)	72.7	18.3	53.7	28.7	81.5	21.0	68.6	29.0
Algebra II (0.50)	55.7	9.4	39.2	16.8	70.3	10.5	55.2	15.2
Trigonometry (0.50)	24.3	1.4	14.4	3.4	22.5	0.8	12.6	3.2
Analysis/pre-calculus (0.50)	12.6	0.4	5.2	1.9	23.4	0.5	10.8	2.4
Statistics/probability (0.50)	2.0	0.1	1.2	0.3	2.6	0.3	1.6	0.4
Calculus (1.00)	10.8	0.1	3.1	0.4	12.9	0.2	4.9	1.2
AP calculus (1.00)	3.4	~0.0	1.2	0.2	9.9	0.1	3.3	0.7
Science								
Any science (1.00)	99.8	92.7	99.4	94.1	100.0	97.0	100.0	96.3
Biology (1.00)	91.4	59.1	87.2	66.3	95.6	82.1	95.6	78.6
AP/honors biology (1.00)	12.8	1.3	6.2	3.1	6.4	0.1	2.4	0.3
Chemistry (1.00)	60.0	5.6	35.8	9.9	69.8	5.6	47.2	15.2
AP/honors chemistry (1.00)	6.1	0.2	3.4	0.4	5.5	~0.0	2.2	0.2
Physics (1.00)	30.4	1.3	15.6	1.9	32.6	1.4	16.2	3.2
AP/honors physics (1.00)	2.4	0.1	1.0	~0.0	3.6	~0.0	0.6	0.2
Engineering (1.00)	0.3	0.1	~0.0	0.1	0.3	~0.0	0.4	0.1
Astronomy (0.50)	1.7	0.9	0.9	0.4	2.1	0.5	1.2	1.6
Geology/earth science (0.50)	14.5	10.2	18.6	11.7	22.2	21.2	26.2	21.0
Biology and chemistry (2.00)	56.3	3.9	32.4	7.7	67.3	4.8	45.9	11.6
Biology, chemistry, and physics (3.00)	24.3	0.2	9.8	0.6	29.4	~0.0	12.5	0.8

[1] For definitions of school program categories, see the supplemental note to *Indicator 24.*

[2] These data only report the percentage of students who earned credit in mathematics courses while in high school and do not count those students who took these courses prior to entering high school. In 1992, for example, approximately 93 percent of students had taken algebra I at any time prior to graduating high school, and about 70 percent had taken geometry.

~ Percents less than 0.05 are rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Table S24 Standard errors for the text table in *Indicator 24*

Mathematics and science courses	Total				Male				Female			
	1982	1987	1990	1994	1982	1987	1990	1994	1982	1987	1990	1994
Mathematics												
Algebra I	0.9	1.0	1.6	1.4	1.0	1.2	1.7	1.4	1.2	1.1	1.8	1.4
Geometry	0.8	1.0	1.3	1.4	0.8	1.2	1.6	1.5	1.2	1.0	1.3	1.4
Algebra II	0.9	1.2	1.1	1.3	1.1	1.4	1.3	1.3	1.0	1.2	1.1	1.4
Trigonometry	0.6	1.5	1.3	1.3	1.0	1.8	1.4	1.4	0.5	1.4	1.3	1.4
Analysis/pre-calculus	0.4	0.9	1.0	0.8	0.5	1.0	1.1	0.8	0.6	0.8	0.9	0.9
Calculus	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.4	0.4	0.4	0.6
Science												
Biology	0.8	1.0	1.0	1.0	1.0	1.2	1.1	1.1	1.1	0.8	0.9	0.9
Chemistry	0.8	1.1	1.2	1.0	1.1	1.3	1.4	1.0	0.7	1.2	1.3	1.2
Physics	0.5	0.9	0.8	0.8	1.0	1.0	0.9	1.0	0.4	0.9	0.8	0.9
Biology and chemistry	0.8	1.1	1.3	1.2	1.2	1.3	1.4	1.2	0.6	1.2	1.3	1.4
Biology, chemistry, and physics	0.5	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.4	0.7	0.8	0.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Table S24-1 Standard errors for table 24-1

Mathematics and science courses (credits)	1982 White	1982 Black	1982 His-panic	1982 Asian/ Pacific Islander	1982 American Indian/ Alaskan Native	1987 White	1987 Black	1987 His-panic	1987 Asian/ Pacific Islander	1987 American Indian/ Alaskan Native
Mathematics										
Any mathematics (1.00)	0.2	0.3	0.5	*0.0	0.4	0.1	0.3	0.2	0.1	0.8
Algebra I (1.00)	1.0	1.8	1.6	5.4	6.5	1.3	1.3	1.8	2.4	2.1
Geometry (1.00)	0.9	1.8	1.4	4.7	7.0	1.2	2.0	1.7	2.6	4.0
Algebra II (0.50)	1.1	1.8	1.2	5.9	3.4	1.4	1.4	2.1	5.0	3.4
Trigonometry (0.50)	0.7	0.8	0.8	3.1	1.4	1.7	1.1	0.9	5.4	1.4
Analysis/pre-calculus (0.50)	0.5	0.4	0.5	3.2	1.7	1.0	0.8	1.0	6.0	1.1
Statistics/probability (0.50)	0.2	0.2	0.1	0.7	*0.0	0.4	0.1	0.1	0.7	*0.0
Calculus (1.00)	0.4	0.4	0.3	2.7	2.2	0.4	0.3	0.7	4.1	0.4
AP calculus (1.00)	0.3	0.1	0.1	1.6	0.1	0.3	0.3	0.6	4.7	0.4
Science										
Any science (1.00)	0.3	0.4	1.0	1.2	5.0	0.2	0.4	0.4	0.3	0.6
Biology (1.00)	0.9	2.0	2.0	2.2	6.8	1.1	1.8	1.5	1.4	1.9
AP/honors biology (1.00)	0.6	1.2	0.6	2.5	0.6	0.4	0.4	0.5	1.2	0.1
Chemistry (1.00)	0.9	1.4	1.0	4.4	6.8	1.2	1.7	1.5	3.8	2.0
AP/honors chemistry (1.00)	0.4	0.6	0.4	1.3	0.9	0.4	0.2	0.6	2.5	0.3
Physics (1.00)	0.6	0.7	0.6	3.4	3.1	1.0	1.0	1.0	4.2	2.4
AP/honors physics (1.00)	0.2	0.4	0.1	1.0	*0.0	0.3	0.1	0.3	1.5	0.5
Engineering (1.00)	0.1	0.1	0.1	*0.0	*0.0	*0.0	0.4	0.1	0.2	*0.0
Astronomy (0.50)	0.2	0.2	0.2	*0.0	*0.0	0.2	0.2	0.2	0.3	0.5
Geology/earth science (0.50)	0.8	1.7	1.1	2.1	6.1	2.2	2.7	1.8	3.3	2.4
Biology and chemistry (2.00)	0.9	1.4	1.0	4.0	7.2	1.2	1.8	1.4	4.0	2.2
Biology, chemistry, and physics (3.00)	0.6	0.7	0.5	3.9	3.1	0.8	1.0	0.8	4.2	2.2

Table S24-1 Standard errors for table 24-1 - Continued

Mathematics and science courses (credits)	1990 White	1990 Black	1990 His-panic	1990 Asian/ Pacific Islander	1990 American Indian/ Alaskan Native	1994 White	1994 Black	1994 His-panic	1994 Asian/ Pacific Islander	1994 American Indian/ Alaskan Native
Mathematics										
Any mathematics (1.00)	0.1	0.1	0.1	0.2	*0.0	0.1	0.2	0.2	*0.0	0.7
Algebra I (1.00)	2.0	2.4	2.7	3.1	8.4	1.6	2.9	1.4	2.4	4.9
Geometry (1.00)	1.4	2.6	2.8	2.8	2.8	1.6	3.1	1.8	3.9	4.4
Algebra II (0.50)	1.1	2.8	2.7	4.9	4.8	1.4	2.6	1.8	5.0	6.4
Trigonometry (0.50)	1.4	1.9	1.5	3.8	4.5	1.6	1.1	1.0	2.8	1.8
Analysis/pre-calculus (0.50)	1.0	1.0	0.6	6.6	3.1	1.1	1.2	1.3	5.4	2.2
Statistics/probability (0.50)	0.2	0.4	0.5	0.5	0.3	0.4	1.0	0.3	0.3	0.8
Calculus (1.00)	0.5	0.5	0.7	3.3	2.8	0.6	0.6	0.5	3.3	1.2
AP calculus (1.00)	0.5	0.3	0.6	2.8	2.6	0.6	0.4	0.4	2.9	1.4
Science										
Any science (1.00)	0.2	0.2	0.2	0.2	*0.0	0.1	0.2	0.2	0.4	0.3
Biology (1.00)	1.0	2.2	1.4	2.8	4.4	1.2	2.1	0.7	1.3	2.3
AP/honors biology (1.00)	0.7	1.7	0.7	2.2	1.2	0.6	0.8	0.9	1.8	1.3
Chemistry (1.00)	1.4	2.2	2.9	4.0	4.5	1.1	2.7	2.8	5.0	5.4
AP/honors chemistry (1.00)	0.6	1.0	0.4	1.9	2.6	0.6	0.7	0.6	1.5	0.6
Physics (1.00)	0.7	1.6	1.3	3.5	3.8	1.1	1.2	1.4	4.8	2.8
AP/honors physics (1.00)	0.4	0.3	0.4	2.6	0.5	0.4	0.4	0.5	1.4	0.3
Astronomy (0.50)	0.4	0.2	0.5	0.3	1.3	0.6	0.2	0.2	0.4	1.2
Geology/earth science (0.50)	3.0	2.5	3.1	1.8	9.7	2.8	5.0	3.0	2.2	8.7
Biology and chemistry (2.00)	1.4	2.2	2.7	3.4	4.5	1.4	2.8	2.6	4.6	5.4
Biology, chemistry, and physics (3.00)	0.8	1.2	1.2	2.6	3.1	1.0	1.2	1.1	4.2	2.4

* Standard errors less than 0.05 are is rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates,* 1996.

Table S24-2 Standard errors for table 24-2

Mathematics and science courses (credits)	1982			1987			1990			1994		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Mathematics												
Any mathematics (1.00)	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Algebra I (1.00)	0.9	1.0	1.2	1.0	1.2	1.1	1.6	1.7	1.8	1.4	1.4	1.4
Geometry (1.00)	0.8	0.8	1.2	1.0	1.2	1.0	1.3	1.6	1.3	1.4	1.5	1.4
Algebra II (0.50)	0.9	1.1	1.0	1.2	1.4	1.2	1.1	1.3	1.3	1.3	1.3	1.4
Trigonometry (0.50)	0.6	1.0	0.5	1.5	1.8	1.4	1.3	1.4	1.3	1.3	1.4	1.4
Analysis/pre-calculus (0.50)	0.5	0.5	0.6	0.9	1.0	0.8	1.0	1.1	0.9	0.8	0.8	0.9
Statistics/probability (0.50)	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.3	0.2	0.3	0.4	0.4
Calculus (1.00)	0.4	0.5	0.4	0.4	0.5	0.4	0.5	0.6	0.4	0.5	0.6	0.6
AP calculus (1.00)	0.3	0.3	0.3	0.4	0.5	0.4	0.4	0.6	0.4	0.5	0.6	0.5
Science												
Any science (1.00)	0.3	0.3	0.4	0.2	0.3	0.1	0.1	0.3	1.0	0.1	0.2	0.1
Biology (1.00)	0.8	1.0	1.1	1.0	1.2	0.8	1.0	1.1	0.9	1.0	1.1	0.9
AP/honors biology (1.00)	0.5	0.5	0.6	0.4	0.5	0.4	0.8	0.6	0.9	0.6	0.6	0.6
Chemistry (1.00)	0.8	1.1	0.7	1.1	1.3	1.2	1.2	1.4	1.3	1.0	1.0	1.2
AP/honors chemistry (1.00)	0.4	0.4	0.4	0.4	0.4	0.3	0.5	0.5	0.5	0.5	0.6	0.5
Physics (1.00)	0.5	1.0	0.4	0.9	1.0	0.9	0.8	0.9	0.8	0.8	1.0	0.9
AP/honors physics (1.00)	0.1	0.2	0.1	0.3	0.4	0.2	0.4	0.5	0.3	0.3	0.4	0.3
Engineering (1.00)	0.1	0.1	*0.0	0.1	0.1	0.1	*0.0	0.1	*0.0	0.1	0.1	0.1
Astronomy (0.50)	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.5	0.6	0.4
Geology/earth science (0.50)	0.6	0.7	0.8	1.9	1.8	2.0	2.4	2.4	2.5	2.4	2.4	2.5
Biology and chemistry (2.00)	0.8	1.2	0.6	1.1	1.3	1.2	1.3	1.4	1.3	1.2	1.2	1.4
Biology, chemistry, and physics (3.00)	0.5	0.8	0.4	0.7	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.9

* Standard errors is less than 0.05 are rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Table S24-3 Standard errors for table 24-3

Mathematics and science courses (credits)	1982		1987		1990		1994	
	Public	Private	Public	Private	Public	Private	Public	Private
Mathematics								
Any mathematics (1.00)	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1
Algebra I (1.00)	0.9	2.7	1.1	3.0	1.8	2.2	1.5	3.9
Geometry (1.00)	0.9	2.7	1.0	2.1	1.4	2.2	1.4	2.3
Algebra II (0.50)	0.8	2.6	1.1	3.0	1.2	2.7	1.3	2.9
Trigonometry (0.50)	0.6	2.2	1.5	3.9	1.4	3.9	1.3	5.9
Analysis/pre-calculus (0.50)	0.4	2.3	0.9	3.1	1.1	3.4	0.9	3.5
Statistics/probability (0.50)	0.2	0.6	0.3	1.2	0.2	1.0	0.4	0.9
Calculus (1.00)	0.3	1.9	0.4	2.3	0.5	1.3	0.5	2.1
AP calculus (1.00)	0.3	1.0	0.4	1.3	0.4	1.4	0.5	2.1
Science								
Any science (1.00)	0.3	0.2	0.2	0.1	0.2	*0.0	0.3	0.2
Biology (1.00)	0.9	1.5	1.0	1.2	1.1	0.5	1.1	0.8
AP/honors biology (1.00)	0.5	2.0	0.3	1.9	0.8	0.9	0.5	3.8
Chemistry (1.00)	0.8	2.4	1.0	3.4	1.4	2.7	1.0	3.4
AP/honors chemistry (1.00)	0.4	1.6	0.3	1.2	0.5	0.5	0.5	1.6
Physics (1.00)	0.5	1.9	1.0	2.1	0.8	2.3	0.9	3.6
AP/honors physics (1.00)	0.2	0.6	0.2	1.7	0.4	0.8	0.4	1.3
Engineering (1.00)	0.1	0.1	0.1	*0.0	*0.0	0.1	0.1	*0.0
Astronomy (0.50)	0.2	0.1	0.2	0.2	0.3	0.3	0.6	0.2
Geology/earth science (0.50)	0.6	2.3	2.2	3.9	2.6	4.1	2.5	10.1
Biology and chemistry (2.00)	0.9	2.6	1.0	3.4	1.4	2.7	1.1	3.4
Biology, chemistry, and physics (3.00)	0.5	1.6	0.8	2.2	0.7	2.0	0.8	3.2

* Standard errors is less than 0.05 are rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Table S24-4 Standard errors for table 24-4

Mathematics and science courses (credits)	1987				1994			
	Big city	Urban fringe	Medium city	Small place	Big city	Urban fringe	Medium city	Small place
Mathematics								
Any mathematics (1.00)	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.1
Algebra I (1.00)	3.2	2.4	3.5	2.1	2.6	3.2	3.5	2.1
Geometry (1.00)	3.0	2.1	4.4	2.0	3.1	2.6	2.9	1.6
Algebra II (0.50)	2.9	2.1	2.6	1.8	3.3	2.2	2.5	1.9
Trigonometry (0.50)	3.3	2.8	3.2	2.4	3.0	3.0	3.2	1.7
Analysis/pre-calculus (0.50)	2.8	1.9	2.5	1.3	2.2	2.4	1.9	1.4
Statistics/probability (0.50)	0.6	0.4	0.0	0.5	0.9	0.8	0.6	0.4
Calculus (1.00)	1.5	0.9	0.7	0.5	1.0	1.2	0.8	0.8
AP calculus (1.00)	1.6	0.8	0.9	0.5	0.9	1.2	0.9	0.8
Science								
Any science (1.00)	0.1	0.3	0.1	0.2	0.1	0.3	0.1	0.2
Biology (1.00)	1.4	1.7	1.7	1.6	4.2	1.3	2.4	1.0
AP/honors biology (1.00)	2.3	0.9	0.8	0.4	1.8	1.6	1.4	0.6
Chemistry (1.00)	3.0	2.4	3.1	1.8	3.0	2.0	2.4	1.3
AP/honors chemistry (1.00)	0.8	1.2	0.9	0.5	0.7	1.4	0.8	0.8
Physics (1.00)	2.0	1.4	3.0	1.5	2.0	2.7	2.1	1.1
AP/honors physics (1.00)	1.6	0.5	0.7	0.3	0.7	1.0	1.0	0.2
Engineering (1.00)	0.1	*0.0	*0.0	*0.0	0.2	0.4	0.2	*0.0
Astronomy (0.50)	1.3	0.5	0.9	0.2	0.4	1.1	1.2	0.6
Geology/earth science (0.50)	3.5	3.5	3.5	3.5	6.8	4.8	6.1	3.4
Biology and chemistry (2.00)	3.0	2.5	3.1	1.9	4.3	1.9	2.3	1.3
Biology, chemistry, and physics (3.00)	1.9	1.3	2.2	1.0	2.4	2.3	1.8	1.9

* Standard errors is less than 0.05 are rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School* Graduates, 1996.

Table S24-5 Standard errors for table 24-5

Mathematics and science courses (credits)	1982				1994			
	Northeast	South	Midwest	West	Northeast	South	Midwest	West
Mathematics								
Any mathematics (1.00)	0.4	0.2	0.4	0.6	0.2	0.1	0.2	0.2
Algebra I (1.00)	2.0	1.5	1.5	2.1	3.6	1.8	3.2	3.6
Geometry (1.00)	2.2	1.1	1.3	1.7	4.9	1.6	2.6	2.5
Algebra II (0.50)	2.0	1.4	1.0	1.7	2.7	1.6	2.6	3.6
Trigonometry (0.50)	2.0	0.8	1.2	1.2	4.6	1.4	3.0	2.1
Analysis/pre-calculus (0.50)	1.2	0.9	0.6	0.8	2.6	1.0	1.8	1.7
Statistics/probability (0.50)	0.4	0.2	0.2	0.2	0.6	0.4	0.9	0.6
Calculus (1.00)	1.0	0.4	0.4	0.7	1.9	0.6	1.1	1.2
AP calculus (1.00)	0.9	0.3	0.2	0.6	1.4	0.6	1.2	1.0
Science								
Any science (1.00)	0.6	0.3	0.8	0.9	0.2	0.1	0.3	0.2
Biology (1.00)	1.4	1.6	1.4	2.0	0.6	0.7	2.9	3.0
AP/honors biology (1.00)	1.1	0.7	0.8	0.6	1.1	1.0	1.1	1.3
Chemistry (1.00)	1.6	1.2	1.1	1.5	2.0	1.7	1.9	2.9
AP/honors chemistry (1.00)	1.1	0.4	0.5	0.7	1.4	0.9	1.2	0.6
Physics (1.00)	1.2	0.7	1.0	1.6	2.8	1.2	1.4	2.4
AP/honors physics (1.00)	0.5	0.2	0.2	0.4	1.3	0.4	0.6	0.8
Engineering (1.00)	0.2	*0.0	0.1	0.1	0.3	0.2	*0.0	0.1
Astronomy (0.50)	0.4	0.3	0.3	0.2	0.4	0.3	1.7	0.3
Geology/earth science (0.50)	2.5	1.8	1.5	2.0	7.5	4.2	4.0	4.3
Biology and chemistry (2.00)	1.5	1.0	1.1	1.8	1.9	1.7	3.0	2.5
Biology, chemistry, and physics (3.00)	1.0	0.7	0.8	1.2	2.3	1.1	1.6	2.1

* Standard errors is less than 0.05 are rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Table S24-6 Standard errors for table 24-6

Mathematics and science courses (credits)	1982				1994			
	Academic	Vocational	Both	Neither	Academic	Vocational	Both	Neither
Mathematics								
Any mathematics (1.00)	0.1	0.4	0.1	0.4	*0.0	0.5	*0.0	0.7
Algebra I (1.00)	1.3	1.4	1.6	1.4	1.5	2.6	1.6	2.4
Geometry (1.00)	1.5	1.2	1.5	1.8	1.2	2.1	2.0	3.0
Algebra II (0.50)	1.3	0.7	1.7	1.6	1.5	1.4	1.8	2.2
Trigonometry (0.50)	1.2	0.2	1.2	0.6	1.8	0.4	1.2	1.2
Analysis/pre-calculus (0.50)	1.2	0.1	0.6	0.5	1.2	0.3	0.9	0.7
Statistics/probability (0.50)	0.4	0.1	0.5	0.1	0.4	0.2	0.4	0.2
Calculus (1.00)	0.8	*0.0	0.8	0.2	0.7	0.1	0.5	0.5
AP calculus (1.00)	0.5	*0.0	0.7	0.1	0.7	0.1	0.4	0.3
Science								
Any science (1.00)	0.1	0.7	0.2	0.7	*0.0	1.0	*0.0	0.6
Biology (1.00)	0.8	1.7	1.2	1.5	1.1	2.5	0.8	2.7
AP/honors biology (1.00)	1.0	0.2	0.9	0.6	0.8	0.1	0.5	0.2
Chemistry (1.00)	1.2	0.6	1.1	1.0	1.1	0.9	1.6	2.3
AP/honors chemistry (1.00)	0.8	0.1	0.9	0.2	0.8	*0.0	0.5	0.1
Physics (1.00)	1.0	0.3	1.3	0.3	1.1	0.4	0.9	0.8
AP/honors physics (1.00)	0.3	0.1	0.4	*0.0	0.5	*0.0	0.2	0.2
Engineering (1.00)	0.1	0.1	*0.0	0.1	0.1	*0.0	0.1	0.1
Astronomy (0.50)	0.3	0.4	0.3	0.2	0.6	0.2	0.4	0.9
Geology/earth science (0.50)	1.3	0.6	1.8	1.4	2.5	3.4	3.6	2.6
Biology and chemistry (2.00)	1.3	0.3	1.1	0.9	1.5	0.8	1.5	2.0
Biology, chemistry, and physics (3.00)	1.1	0.1	0.9	0.2	1.1	*0.0	0.8	0.4

* Standard errors is less than 0.05 are rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.

Percentage of high school graduates taking selected mathematics and science courses in high school, by sex: 1982, 1987, 1990, and 1994

Mathematics and science courses[1]	Total				Male				Female			
	1982	1987	1990	1994	1982	1987	1990	1994	1982	1987	1990	1994
Mathematics[2]												
Algebra I	53.9	64.0	64.2	66.4	52.2	62.3	61.7	64.7	55.4	65.7	66.5	68.1
Geometry	45.5	59.7	63.4	70.4	45.0	58.8	62.4	68.3	45.9	60.4	64.4	72.4
Algebra II	32.2	48.1	51.7	58.6	32.4	47.3	50.0	55.4	32.0	48.9	53.3	61.6
Trigonometry	12.1	18.6	18.2	17.2	13.2	19.5	18.1	16.6	11.1	17.6	18.2	17.8
Analysis/pre-calculus	5.9	12.6	13.4	17.3	6.2	13.5	14.0	16.3	5.6	11.6	12.8	18.2
Calculus	4.6	6.0	6.5	9.2	5.1	7.4	7.5	9.4	4.1	4.6	5.6	9.1
Science												
Biology	76.4	87.8	91.3	93.5	74.2	86.3	90.0	92.3	78.4	89.4	92.5	94.7
Chemistry	30.9	43.7	49.0	56.0	31.9	44.3	47.9	53.2	30.0	43.2	50.0	58.7
Physics	14.2	19.2	21.5	24.4	18.8	24.0	25.4	26.9	10.0	14.6	18.0	22.0
Biology and chemistry	28.1	42.1	47.6	53.8	28.2	42.2	46.4	50.9	28.0	42.0	48.8	56.6
Biology, chemistry, and physics	10.6	16.4	18.8	21.3	13.4	20.1	21.8	23.1	7.9	12.8	16.1	19.6

[1] The minimum number of units used for inclusion in this indicator was 1.0 for individual courses except for algebra II, trigonometry, and analysis/precalculus where 0.5 was set as the minimum number of credits.

[2] These data only report the percentage of students who earned credit in mathematics courses while in high school and do not count those students who took these courses prior to entering high school. In 1992, for example, approximately 93 percent of students had taken algebra I at any time prior to graduating from high school, and about 70 percent had taken geometry.

NOTE: See the supplemental note to this indicator for further explanation of courses and definitions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *The 1994 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1994, 1990, 1987, and 1982 High School Graduates*, 1996.